longest; formula 6, 3 (2, 1), (4, 5); all joints except first with several hairs Mentum fairly long and pointed, with a few hairs at tip. Spiracles widely dilated at both extremities. Legs, like the antennae, very short; coxa short and broad; trochanter very large, with a single long fine hair; femora thick, with a few hairs on under-surface; tibia short and thick, with 2 short

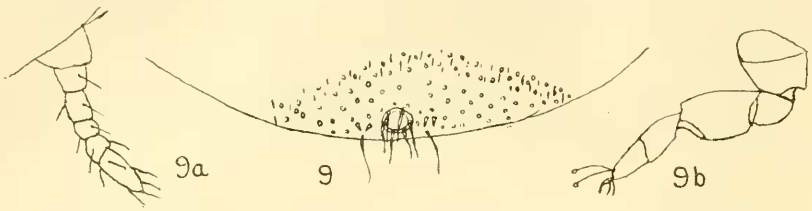

Fig. 9.—*Ripersia globatus*. Abdominal segment with lobes; × 120. 9*a*. Antennae of adult female; × 200. 9*b*. Leg of adult female; × 200.

spines near tibio-tarsal joint; tarsus slightly shorter than tibia, and more slender; upper digitules fine knobbed hairs, lower digitules fine hairs slightly longer than claw. The coxa on the posterior pair of legs is abnormally enlarged. Anal ring with 6 hairs, anal lobes imperceptible, represented merely by 2 short conical spines and a single long fine hair. Dermis covered with short fine hairs, interspersed with small round spinnerets. Length, 2·07 mm.

Adult male unknown.

Hab.—Subterranean, on grass-roots, moss, also in ants' nests; Oamaru.

Art. XIX.—*New* Coccidae.

By G. Brittin.

[*Read before the Philosophical Institute of Canterbury, 2nd December, 1914.*]

The following paper contains the descriptions of one new genus and three new species of the New Zealand *Coccidae*.

The new genus *Scutare* will make a most interesting addition to the list of the New Zealand *Coccidae*, and has been placed temporarily in the subfamily *Conchaspinae*, to which it evidently belongs; and if it should ultimately be permanently placed in that subfamily a material alteration will have to be made in the diagnosis of the *Conchaspinae*. The species *fimbriata* varies in several important points from all the species belonging to the genus *Conchaspis* Cockerell. There is one genus of the *Conchaspinae* of which I am at present unable to get any information, that is the monotypic genus *Fagisuga** Lindinger. It may happen that my species belongs to that genus, but until I have received word from England and America I will leave it as at present placed.

* "Catalogue of *Coccidae*," vol. ii, U.S. Dept. Agric., 1909, p. 35.

With regard to the species *Nudata*, this is placed in the genus *Cryptococcus*, which up to the present time has been a monotypic genus, the type being *C. fagi* Bärensprung, and to include the present species a material alteration will have to be made. In *C. fagi* the insect is covered with a loose cottony secretion, while *C. nudata* is, so far as I have been able to make out, entirely naked, and has 6 hairs on the anal ring, instead of 4 as in *C. fagi*. Both species have the distinguishing feature of the minute rudimentary antennae, and the equally small tuberculate processes which are mere vestiges of the posterior legs. Up to the present I have only been able to examine the adult female, but I hope shortly to hatch out some of the larvae.

The new species of *Fiorinia* I have much pleasure in naming after the late Mr. W. M. Maskell, who was the pioneer worker on the New Zealand *Coccidae*, and at the same time one of the leading men of his day on this subject.

Genus Pinnaspis Cockerell.

Pinnaspis nitidus mihi. Figs. 1 and 2.

In my last paper to the Institute I gave a description of the adult female, and also stated that I was not certain of the male scale. Since then I have been fortunate enough to get the male in the pupa stage, but, owing to moving to Christchurch shortly after, I was not successful in hatching any of the adult males. This is rather to be regretted, as I believe that the male of this genus has not yet been found. In figs. 1 and 2 will be found an illustration of both the male and female scales, and the difference between them can easily be seen.

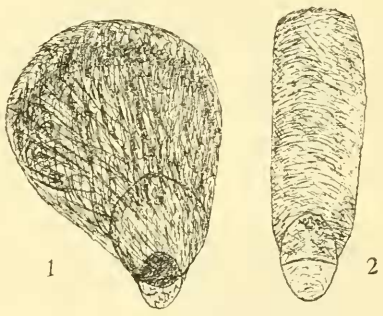

Fig. 1.—*Pinnaspis nitidus*. Female scale.
" 2.— " Male scale.

The following is the description of the male scale: Puparium of male elongated, with straight narrow sides; colour slightly lighter than that of the female; convex; closely felted; not carinated; exuvia rather large. Length, about 1·2 mm.

Subfam. Diaspinae.

Genus Fiorinia.

Fiorinia maskelli sp. nov. Fig. 3.

Female puparium white; elongated; generally straight, sometimes curved; convex; first exuvia yellow, second exuvia brown, and entirely enclosing the insect.

Male puparium white; convex; elongated, with straight narrow sides; slightly shorter than that of the female.

Adult female white; at first elongate, but during gestation shrinking up until it has the appearance of an *Aspidiotus;* very convex; rudimentary antennae with 5 long hairs; cephalic extremity large, with a few short spiny hairs; anterior spiracles set very close to the rostrum, with a group

of from 18 to 20 parastigmatic glands; slightly above, and between the anterior spiracles and the edge of the body, are a group of short tubular spinnerets. Pygidium rather small and pointed, slightly chitinized, with 5 distinct groups of circumgenital glands; anterior group 15 glands; anterior laterals 23–34; posterior laterals 23–26; 2 pairs of lobes, the median pair being bilobed, the outer lobule being the smallest, the second pair of lobes very minute. Immediately above each lobe is a long spine-like hair, with 2 more beyond the outer lobes; there are several short hairs along the edge of the pygidium, 2 being between the median pair and 3 between the median and outer pair of lobes. There are no marginal tubular spinnerets, but 6 large scar-like markings appear on the lower end of the pygidium, which has also a stirated appearance. Anal orifice situated well above the middle of the pygidium. Length, about 1·67 mm.

Fig. 3.—*Fiorinia maskelli.* Pygidium.

Female of second instar very similar to that of the second instar of *F. stricta*, but the dorsal tubular spinnerets are rather more numerous than in *F. stricta*.

Larva normal of the genus.

Adult male unknown.

Hab.—On *Plagianthus*, Oamaru; *Veronica* sp., Bluff; *Pittosporum* sp., Bluff, Oamaru, and Christchurch.

Subfam. Conchaspinae.

Genus Scutare gen. nov.

Puparium of female flat; more or less circular; fringed; ventral scale complete. Adult female retaining feet and antennae; anal ring setiferous; mentum biarticulate; terminal segments of the body somewhat resembling that of the *Diaspinae*.

Scutare fimbriata sp. nov. Figs. 4–10.

Puparium of adult female very thin; semi-opaque; appears to be of a dark-red colour, but is really white; glassy; ovate; surrounded by a broad white fringe; ventral scale complete.

Puparium of male pupa oblong; white; rather flat; loosely felted; completely enveloping pupa.

Adult female dark red; elongated; widest at cephalic extremity, and tapering towards the abdominal lobes. Eyes prominent, and situated at the inner base of the antennae. Antennae of 6 joints, tapering towards apex, third joint longest; formula 3, 6 (4, 5), (1, 2); apical joint with several hairs. Mentum biarticulate. Spiracles, in 2 pairs, are fairly large and ovate. Legs normal; coxa short and broad; femora thick; with 1 short hair at the junction of the trochanter; tibia short and thin, with small spine at the tibio-tarsal joint; tarsus almost twice as long as tibia; claw long and thin; digitules, two upper only observed. Abdominal portion of body very distinctly segmented, highly chitinized, and tapering towards the lobes, which are rather large and prominent. From the outer side of each lobe a narrow hyaline band converges towards the middle, and then runs directly upwards through the middle of the next four segments,

which it divides in halves, and which thus appear like 8 distinct plates, 4 on each side; the next immediate segment above is entire. Immediately above the lobes is a triangular segment left by the converging hyaline bands. The lobes are broad at the base, and chitinized, tapering sharply to the extremity; on each lobe there is 1 very long seta, and 3 long tubular spines;

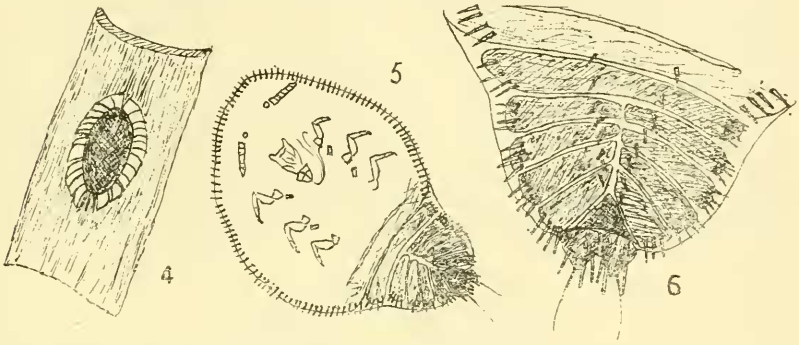

Fig. 4.—Insect on bark, showing fringe.
„ 5.—Insect after treatment with potash.
„ 6.—Abdominal segments, showing plates and spines.

between the lobes is the anal ring, with 6 long fine hairs. On each of the free abdominal segments, and somewhat within the margin, on the dorsal surface, are 4 long tubular spines similar to those on the lobes, and a row of these spines continue also round the edge of the thoracic portion of the

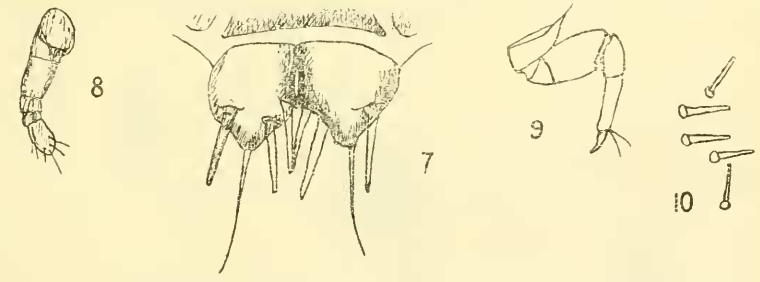

Fig. 7.—Abdominal lobes, showing anal ring.
„ 8.—Antennae of adult female.
„ 9.—Leg of adult female.
„ 10.—Marginal spines.

insect, but are longest towards the abdominal region; a double row of similar but smaller spines extends up the centre of the dorsal surface from the lobes to the fifth free abdominal segment. Numerous minute hairs and spines are scattered over the dorsal surface, also a few small circular spinnerets. Length, about 1·36 mm.

Larva short and ovate; colour light-red. Antennae of 6 joints, third and sixth joints equal and longest; formula (3, 6), (1, 2), (4, 5). Mentum biarticulate Legs normal; tarsus twice length of tibia. Anal lobes conepicuous, with 1 long seta and 3 long tubular spines. Anal ring large, with 6 hairs. Round margin of body is a row of long tubular spines, with 4 more rows extending up the centre of the dorsum.

This insect differs so much from all the known species of the genus *Conchaspis* that I have thought it best to place it under an entirely new genus for the present. Mr. Green,* in his book "*Coccidae* of Ceylon," diagnoses the genus *Conchaspis* as follows: "Scale elevated, more or less circular; adult female retaining feet and antennae, the latter of few joints; genital aperture without setiferous ring; mentum biarticulate; terminal segments of body united into a piece somewhat resembling the pygidium of the *Diaspinae*." Out of these seven characteristics of the genus *Conchaspis* two very important ones do not agree, and these are the elevated scale and the non-setiferous ring. In *S. fimbriata* the scale is flat and glassy, and appears like a *Ctenochiton;* the anal ring has 6 hairs, and the antennae have 6 joints, instead of 4 as in the genus *Conchaspis*. In fact, the insect appears to have a connection with the *Diaspinae*, with its definite pygidium; the *Ctenochiton*, with its glassy fringed scale; and the *Dactylopinae*, with its prominent anal lobes and setiferous ring.

Subfam. Dactylopinae.

Genus Cryptococcus Douglas.

Cryptococcus nudata sp. nov. Figs. 11–14.

Adult female naked; globular; colour light yellow; rostrum small, mentum biarticulate, rostral setae medium length; spiracles 4, large and oval, with a circular ring of glands round opening; rudimentary antennae with 2 or 3 short hairs; anterior and intermediate pair of legs absent, posterior pair atrophied and represented merely by a short protuberance; anal ring large, compound, with 6 short hairs, and surrounded by what appears to be a broad chitinous plate, on which there are 6 short hairs

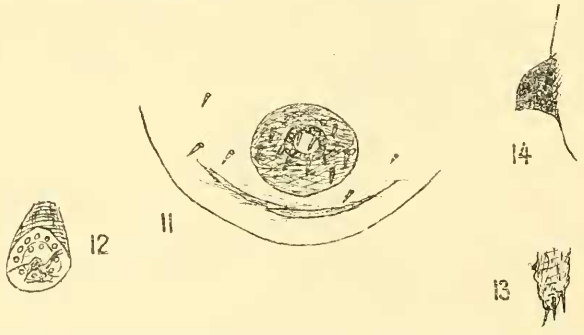

Fig. 11.—Abdominal segment, showing anal ring and chitinous plate.
„ 12.—Spiracle of adult female.
„ 13.—Rudimentary antennae of adult female.
„ 14.—Rudimentary leg of adult female.

—three on each side of the anal ring; abdominal lobes absent; dermis with a few minute hairs scattered over it. The dorsal surface of the abdomen appears to be more chitinized than the rest of the body. Length, about 0·7 mm.

Larva and adult male unknown.

Hab.—On *Hoheria* sp., Cashmere Hills, Christchurch.

* "*Coccidae* of Ceylon," vol. 1, p. 19.